# **Database Model Documentation**

## **Overview**

This document provides a detailed explanation of the database models defined in the Django project. It includes information on each model's purpose, fields, and relationships to other models.

**Models**

### **1. Table**

**Fields:**

* table\_id (IntegerField, PK): Primary key for the table.
* table\_name (CharField): The name of the table.
* description (TextField): A description of the table.
* use\_cases (TextField): Use cases related to the table.
* important\_notes (TextField): Important notes or considerations.

**Meta Options:**

* verbose\_name: "Table"
* verbose\_name\_plural: "Tables"
* ordering: by table\_name

**String Representation:**

* Returns the table name.

**Relationships:**

* Many-to-Many with Field
* One-to-Many with Label

### **2. Field**

**Fields:**

* field\_id (AutoField, PK): Primary key for the field.
* field\_name (CharField): The name of the field.
* description (TextField): A description of the field.
* position (PositiveIntegerField): Position of the field in the table.
* tables (ManyToManyField to Table): Tables that include this field.

**Meta Options:**

* verbose\_name: "Field"
* verbose\_name\_plural: "Fields"
* ordering: by field\_name

**String Representation:**

* Returns the field name.

**Relationships:**

* Many-to-Many with Table
* One-to-Many with Entry

### **3. Category**

Represents a category for labels.

**Fields:**

* category\_id (AutoField, PK): Primary key.
* category\_name (CharField): Name of the category.

**Meta Options:**

* verbose\_name: "Category"
* verbose\_name\_plural: "Categories"
* ordering: by category\_name

**String Representation:**

* Returns the category name.

**Relationships:**

* One-to-Many with Label

### **4. Label**

Represents a label associated with a table and optionally categorized.

**Fields:**

* label\_id (AutoField, PK): Primary key.
* label\_name (CharField): Name of the label.
* label\_index (PositiveBigIntegerField): Index of the label in the table.
* table\_id (ForeignKey to Table): The table this label belongs to.
* category (ForeignKey to Category, nullable): The category of the label.

**Meta Options:**

* verbose\_name: "Label"
* verbose\_name\_plural: "Labels"
* ordering: by label\_name

**String Representation:**

* Returns the label name.

**Relationships:**

* Many-to-One with Table
* Many-to-One with Category
* One-to-Many with Entry

### **5. Entry**

Represents a single data point at the intersection of a label and a field.

**Fields:**

* entry\_id (AutoField, PK): Primary key.
* entry\_content (TextField): The content of the entry.
* field (ForeignKey to Field): Field associated with this entry.
* label (ForeignKey to Label): Label associated with this entry.

**Meta Options:**

* verbose\_name: "Entry"
* verbose\_name\_plural: "Entries"
* ordering: by entry\_id

**String Representation:**

* Returns the entry content.

**Relationships:**

* Many-to-One with Field
* Many-to-One with Label

## **Relationships Summary**

* **Table <-> Field**: Many-to-Many
* **Table -> Label**: One-to-Many
* **Category -> Label**: One-to-Many
* **Label -> Entry**: One-to-Many
* **Field -> Entry**: One-to-Many

## **ERD**

